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[54] SERVICING SYSTEM FOR AN INKJET
PRINTHEAD

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[56] References Cited

U.S. PATENT DOCUMENTS

4,306,245	12/1981	Kasugayama et al.	347/33
5,051,758	9/1991	Markham	347/28
5,300,958	4/1994	Burke et al.	347/28
5,339,098	8/1994	Nagatomo et al.	
5,396,271	3/1995	Premnath	
5,552,811	9/1996	Kurata et al.	347/28
5,635,965	6/1997	Purwins et al.	
5,706,038	1/1998	Jackson et al.	
5,793,389	8/1998	Mitchell	347/28

FOREIGN PATENT DOCUMENTS

0 465 260 A2 1/1992 European Pat. Off.

0 513 833 A2 11/1992 European Pat. Off.

0 671 272 A2 9/1995 European Pat. Off.

59-14693 1/1984 Japan

59-14962 1/1984 Japan

59-45162 3/1984 Japan

59-45163 3/1984 Japan

59-209876 11/1984 Japan

2-202452 8/1990 Japan

3-90362 4/1991 Japan

3-99857 4/1991 Japan

4-37556 2/1992 Japan

4-307256 10/1992 Japan 347/33

4-338552 11/1992 Japan

5-162320 6/1993 Japan 347/33

6-234221 8/1994 Japan

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[57] ABSTRACT

A wet-wiping printhead cleaning system for inkjet printer incorporating a wiper for wiping the printhead including a treatment fluid applicator configured for placing treatment fluid onto at least one element of the printhead and wiper elements involved in wiping the printhead orifice plate surface, the treatment fluid being placed on said at least one element by direct contact of the applicator. subsequently the wiper wipes the printhead, the treatment being available to enhance cleaning effectiveness, the treatment fluid lubricating the wiper so as to lengthen wiper service life and enhance wiping performance, as well as acting to render unwanted accumulations on the printhead more removable by wiping.

26 Claims, 21 Drawing Sheets

